SESSION III
TIME: Tuesday 9 May, 3:30-5:00
ROOM: Elizabethan Room A
TRACK: Inland and Deep Draft Navigation
TOPIC: Stakeholder/Agency Collaboration in Navigation
MODERATOR: Becky Moyer, Headquarters

PRESENTATIONS:

Title: **Lessons Learned from Implementation of Regional Biological Opinions in the South Atlantic and the Gulf of Mexico**
Presenter: **Daniel Small, South Atlantic Division**

Abstract: The National Marine Fisheries Service has released two Regional Biological Opinions (RBOs) for dredging (primarily hopper dredging) pursuant to the Endangered Species Act. The South Atlantic Regional Biological Opinion covers dredging along the South Atlantic coast from North Carolina south to Florida.The Gulf of Mexico Regional Biological Opinion covers dredging in the Gulf from Florida west to Texas. The two RBOs cover four U.S. Army Corps of Engineers Divisions and seven Districts. While different in several ways, both have resulted in numerous lessons learned including communication, technical investigations and documentation, interagency coordination, coordination and collaboration among three Divisions and seven Districts, and coordination within each district among staff members in Planning, Operations, and Regulatory Divisions.

Title: **Baltimore Harbor and Channels Dredged Material Management Plan (DMMP): Integration of NED and NER Outputs with Stakeholder Collaboration**
Presenter: **Amy Guise, Baltimore District**

Abstract: A projected dredged material placement shortfall for the Baltimore Harbor and Channels project necessitated a DMMP study to provide sufficient placement capacity for a 20 year period. This presentation will highlight the collaborative planning process used to evaluate NED and NER outputs using input from stakeholder groups. The study evaluated the economics of continued maintenance of the navigation channels and the ecosystem outputs associated with a suite of beneficial use alternatives. Collaboration with non-Corps data sources was essential to a successful planning process. The maintenance dredging evaluation drew upon data from a study commissioned by the Maryland Port Administration, the project sponsor. The ecosystem outputs were evaluated in collaboration with an environmental work group composed of Chesapeake Bay environmental experts. Plan formulation integrated the need for material placement capacity with the production of ecosystem benefits. The recommended DMMP integrates NED and NER outputs and demonstrates the importance of collaboration with project stakeholders.

Title: Resolving Litigation to Achieve O&M Dredging in the Snake River
Presenter: Jack Sands, Walla Walla District

Abstract: The Walla Walla District of the Corps of Engineers is responsible for maintaining the Federal navigation channel on the Columbia River above McNary Dam and the Snake River from its mouth to the upstream terminus of the inland navigation channel at Lewiston, Idaho. Historically, the Corps has dredged the Snake River to maintain the channel at certain locations where sedimentation has reduced available depths to below the Congressionally-authorized 14 feet. In 2002, the Corps released a DMMP/EIS that primarily addressed management of dredged material anticipated over a 20-year period.
After successive court challenges, two preliminary injunctions halting dredging, the termination of one contract for the convenience of the government just before dredging was to begin, the development of a stand-alone EIS for a proposed one-year dredging action, and a settlement agreement with the environmental group challenging the action in court, the Corps was finally successful in proceeding with dredging in Snake River this past winter.

Title: Missouri River Navigation vs. Master Water Control Manual
Presenter: John R. LaRandeau, Northwestern Division

Abstract: The Missouri River Basin was in a 15 year battle from 1989 to 2004 on updating the Missouri River Master Water Control Manual. This manual is the Corps bible for the operation of the six mainstem reservoirs on the Missouri River in the states of Montana, North Dakota, South Dakota and Nebraska. The argument, although complex, was basically how to change how the water would be stored and released to meet all the operational needs of the users. An extended drought that began in 1988 that lasted till 1993 negatively impacted the upstream states recreational economy that had developed since the system of dams became fully operational in 1967. This stress led the Corp to begin the process to update the Master Manual. During the process the listing of threatened or endangered species, Interior Least Tern, Piping Plover and Pallid Sturgeon added to the dynamics of the process. This presentation focuses on the Navigation purpose and how it became the political football by the environmental groups and the upstream states in their quest to add weight to the process to change reservoir storage levels and downstream releases. It also discusses how the Corps' Master Manual team worked the navigation issue and collaborated with the basin to finalize the update.

SESSION III
TIME: Tuesday 9 May, 3:30-5:00
ROOM: California West
TRACK: Ecosystem Restoration
TOPIC: Learning From Others, Monitoring and Adapting
MODERATOR: Mark Ziminske, Seattle District

PRESENTATIONS:

Title: **Collaborative Planning And Science Based Scoping: Chesapeake Marshlands Restoration Project**
Presenters: **Steven Kopecky, Baltimore District; Steven Pugh, Baltimore District**

Abstract: Over the past five years, the U.S. Army Corps of Engineers, Baltimore District, has been working with the State of Maryland and the U.S. Fish and Wildlife Service to develop a strategy to restore tidal wetlands in the Blackwater NWR and Fishing Bay WMA area. To address this large and complex problem, the planning team developed a three phase approach. The phases included: 1) a small 10 – 15 acre demonstration project, 2) a mid-sized 100 – 200 acre project at Blackwater National Wildlife Refuge, and 3) a landscape-scale effort to restore 1,000s of acres in the Blackwater NWR and Fishing Bay WMA area. Efforts to conduct landscape-scale restoration have received a major boost by being named as a top priority in the Corps' Baltimore Harbor and Channels Dredged Material Management Plan. As a result, we are currently ramping up to evaluate the feasibility of large scale marsh restoration through the beneficial use of clean dredged material. A collaborative science based approach will be employed to develop a recommended plan for the restoration of this internationally recognized wetland system. The study team will use lessons learned from the demonstration project, from other projects in the Chesapeake Bay area, and from select projects around the country as a foundation to build from. It is anticipated, that bringing together a broad base of experts from academia; Federal, state and local governments; and the private sector, early on in the development of this study, will result in a better project in the long run.

Title: **The Lower Cape May Meadows Coastal Ecosystem Restoration Project**
Presenters: **Beth Brandreth, Philadelphia District**

Abstract: The Lower Cape May Meadows project is a coastal ecosystem restoration project along the Atlantic coast of New Jersey. The project area is 1.3 miles long and encompasses approximately 340 acres of land owned by The Nature Conservancy and NJDEP. The project area is a very rare coastal freshwater wetland system that boasts huge populations of migrating birds, as well as numerous state and Federally-listed threatened and endangered plants and animals. Designing and implementing a beach restoration project with a primary goal of ecosystem restoration has allowed the addition of habitat features not typically possible in standard beach projects. The majority of these features were designed to benefit the Federally threatened piping plover. Since plovers historically nested within the project area, Federal and State agencies worked closely with the Corps to develop habitat features to improve the nesting and feeding habitat available to plovers. Throughout the construction of the project, the Corps has continued to work closely with the landowners and resource agencies to make applicable project modifications to benefit this species resulting in a highly successful 2005 nesting season. Intensive collaboration has also taken place regarding the protection of state-listed plant and animal species which occur at the site.

Title: **Green River – Monitoring Without Borders**
Presenter: **Wm. Michael Turner, Louisville District**

Abstract: A 1998 meeting of a small group of scientists and engineers from The Nature Conservancy (TNC) and Louisville District led to a cooperative effort to modify regulation and operation of Green River Lake. This initial cooperative effort led to the national Sustainable Rivers Project between TNC and USACE. One of the many challenges in implementing this change in reservoir management is monitoring environmental impacts. The Corps budgeting process and policies towards monitoring are not generally supportive of monitoring. Louisville District needed to find partners with common interests in the Green in order to develop a wide-ranging monitoring program downstream of Green River Lake. Fortunately, additional efforts to benefit and protect Green River were initiated around the same time by National Park Service (NPS), Natural Resource Conservation Service (NRCS), Kentucky Department of Fish and Wildlife Resources (KDFWR), TNC and others. Examples and results of cooperative efforts of many agencies, universities, and non-governmental organizations are presented. In addition to modeling reservoir regulation, the first cost shared environmental restoration project between the Corps of Engineers and The Nature Conservancy was designed and constructed during 1999-2001. A Conservation Reserve Enhancement Program (CREP) sponsored by the NRCS, KDFWR, Kentucky Department of Conservation, and The Nature Conservancy added to the momentum. Louisville District participates as a team member developing and guiding the USDA funded monitoring program. Monitoring studies are led by Western Kentucky University. In July 2002, the District joined with Mammoth Cave National Park science staff in development and funding of a NPS research grant proposal for freshwater mussel propagation, rearing and reintroduction program for Green River. The Tennessee Cooperative Unit of US Geological Survey and KDFWR's Center for Mollusk Conservation are partners in this effort. The successful documentation of environmental benefits to the Green River from the work of many others led to the District Engineer signing a Finding of No Significant Impact on March 13, 2006, recommending the continuation of the three-year experimental regulation of Green River Lake as the permanent method of operating this multi-purpose reservoir.

Title: **A Collaborative Approach towards Monitoring and Adaptive Management of Restored Freshwater Tidal Wetlands in the Anacostia River Watershed, Washington, D.C.**
Presenters: **Steven B. Pugh, Baltimore District**

Abstract: Over the past decade, the Corps of Engineers, in partnership with the District of Columbia and the National Park Service, has restored approximately 100 acres of freshwater tidal wetlands in the Anacostia River. Projects were constructed in 1993, 2000, 2003 and one is under construction in 2006. In conjunction with these projects, a monitoring and adaptive management strategy was developed to evaluate project success, provide lessons learned and establish a platform to implement additional management measures when necessary to achieve intended goals. To facilitate communication, a wetlands restoration workgroup was established. Each year, results from the monitoring program and other pertinent research were presented to the workgroup. The workgroup was able to use lessons learned from earlier restoration efforts in the development of subsequent projects. In addition, several adaptive management strategies were initiated that have been critical to insure the future of the tidal wetlands in the Anacostia. Some of these strategies have included non-native plant species control, modifications in targeted wetland plant communities, establishment of temporary goose exclosures and the development of a resident goose management plan. By pulling together the resources of multiple Federal and local agencies along with active citizens groups, many obstacles have been overcome and there is a much better opportunity for problems to be solved in the future.

SESSION III
TIME: Tuesday 9 May, 3:30-5:00
ROOM: Elizabethan Room B
TRACK: Flood & Coastal Storm Damage Reduction
TOPIC: Post-Disaster Assessment Activities
MODERATOR: Peter Blum, North Atlantic Division

PRESENTATIONS:

Title: Plan Formulation Aspects of Shore Protection Project Performance Improvement Initiative (S3P2I)
Presenter: Susan Durden, Institute for Water Resources

Abstract: The Shore Protection Assessment is an initiative authorized by Congress following the tropical storm season of 2004 to evaluate how shore protection projects performed. This is being undertaken to 1) evaluate project performance, 2) identify and recommend formulation and design improvements, and 3) develop a hydrodynamic-sediment transport model.
Presently, the formulation and design practices for shore protection projects vary dramatically by District. Some of this variability is due to different physical, economic, social and environmental conditions, which vary by region. The variability in the formulation and design approach is also likely due to a shortage of corporate tools being available, a lack of unified procedures, and the result of evolution of regional practices in designing, formulating, constructing, and maintaining these projects.
This effort is intended to utilize the information available from the 2004 Tropical Season to review the design and formulation procedures, to identify and recommend formulation and design improvements that could be incorporated into the planning process.
Products from this effort generally include:

1. Overview of current formulation and design procedures,
2. Risk-based beachfill design guidelines
3. Beach-Fx, Operational Guidelines
4. Project Implementation, Monitoring and Maintenance Guidelines

This presentation will present an overview of the analyses, status of the efforts, and findings to date.

Title: Shore Protection Project Performance Improvement Initiative (S3P2I): Economic and Social Effects Work Unit
Presenters: Harry Shoudy, HSC; Almodovar, Institute for Water Resources

Abstract: The following is a suggested interactive workshop topic to be presented by Harry Shoudy: This is the first comprehensive post storm engineering, economic, social, and environmental analysis performed for a Federal storm damage reduction project. In general, monies have simply not been available to document the value of these Federal projects to the nation. The early initiative of this work unit is to analyze the economic value of shore protection projects by performing post storm analyses and to report the findings to Congress, the Administration, and the general public. Consequently, the methodology developed is extremely important in appropriately measuring damages and impacts avoided during hurricanes in the Federal project areas analyzed. Due to the importance of the task and the uniqueness of the analytical approach, the methodology will be peer reviewed in the future by academic and technical experts to assist in identifying an appropriate procedure for this and future post storm analyses.

Prior to review outside the Corps, there is the unique opportunity to discuss the draft methodology and preliminary results for a test area with economists within the Corps. That is the purpose of this workshop.

Title: **The Use of Remote Sensing Techniques for Environmental Assessment of Hurricanes**
Presenter: **Jeff Lillycrop, Mobile District**

Abstract: In the past 2 years, major hurricanes have hit the Florida, Alabama, Mississippi, and Louisiana coasts and resulted in major damage to the environment. These damages have been attributed to various mechanisms such as storm surges, sustained winds, and salt water intrusions. Post hurricane assessments have included inventories of shoreline erosion via LIDAR, damage to vegetation via photography, satellite, and hyperspectral imagery, and assessment of important habitats such as sea turtle nesting areas and bird habitat. While damages were pronounced, the timing and magnitude of the hurricanes has a profound influence on the ecology as a function of the species impacted. In order to more fully understand the impacts of major storms on coastal ecology, methods used to assess physical damage need to be related to ecological interpretation of impacts.

This presentation will provide an overview of existing methods for assessing hurricane impacts on coastal ecology and provide preliminary results of ongoing assessments related to hurricane damages during the 2004 and 2005 season in the southeast.

Title: **GIS Application to Estimate Flooding Damages From Hurricane Katrina**
Presenters: **Kevin Lovetro, New Orleans District; Brian Maestri, New Orleans District**

Abstract: A GIS model was developed by Corps personnel to display the depth of flooding above the first floor elevation of the structures that were inundated when the levees were over-topped or breached by the storm surge from Hurricane Katrina in Orleans, Plaquemines, Jefferson, and St. Bernard Parishes. The model combined hydraulic and economic data with GIS mapping to estimate the flood damages incurred by residential and non-residential structures, their contents, and their vehicles.

Inputs to the model included depth of flooding grids for the inundated areas, an inventory of residential and non-residential structures obtained from the General Building Stock portion of the HAZUS-MH program, which is a multi-hazard loss estimation model developed by FEMA and the National Institute of Building Sciences, and first floor elevations based on a sampling of the structures in the area. Depth-damage relationships developed by a panel of building and construction experts were used to indicate the percentage of the structural and content value that was damaged at each depth of flooding. The damages calculated by the model for each Census block were then aggregated to obtain the flood damages for each neighborhood, community, and parish.

The analytical tools used in this model can also be used to efficiently estimate the damages from future flood events.

SESSSION III
TIME: Tuesday 9 May, 3:30-5:00
ROOM: Elizabethan Room C
TRACK: Watershed/System Assessment
TOPIC: Innovative Analytical Procedures and Tools
MODERATOR: Jay Gamble, Southwestern Division

PRESENTATIONS:

Title: Shared Vision Planning for Mississippi Headwaters ROPE Study
Presenters: Steve Clark, St. Paul District; Hal Cardwell, IWR; Mark Lorie, IWR

Abstract: The St Paul District has been leading a Shared Vision Planning effort for the Reservoir Operating Plan Evaluation (ROPE) for the Upper Mississippi River system. This study involves multiple stakeholder groups and agencies working together to evaluate the impact of reservoir operations on flooding risk, recreational opportunities, environmental quality and other purposes. This talk will give an overview of the ROPE study and how Shared Vision Planning is promoting collaborative planning and stakeholder and public outreach. Lessons learned and future plans for the remainder of the study will also be discussed.

Title: Reservoir Optimization in the Mississippi Headwaters ROPE Study
Presenter: Beth Faber, IWR-HEC; Julien Harou, IWR-HEC; Sara O'Connell, IWR-HEC

Abstract: The Hydrologic Engineering Center (HEC) is participating in the St. Paul District's large-scale study of the Mississippi Headwaters Reservoir System, termed ROPE (Reservoir Operation Plan Evaluation). The study will develop a new operation policy for the reservoir system that considers and attempts to balance the many functions and objectives of the system as a whole. These objectives include tribal resources, flood damage reduction, fish and wildlife habitat considerations, recreation, water quality, water supply, erosion and sedimentation control, and hydropower production.

The Shared Vision effort for the Mississippi Headwaters Reservoir System requires a modeling approach that captures the tradeoffs between the various water system objectives that drive system operation, and is transparent and understandable to the individuals who embody those objectives. An approach that uses both optimization, which makes decisions based on their value to objectives, and simulation, which makes decisions that follow operating instructions or rules, is an effective way to evaluate those tradeoffs. The optimization portion of the study involves developing trade-off curves between pairs of system objectives and asks stakeholders to choose a point in each curve that represents a desired balance between the 2 objectives. After next optimizing the system for all objectives with the chosen balance points, optimal system decisions are studied to infer operating rules that might achieve those decisions in real-time. The inferred rules are simulated in a detailed yet transparent model of the Headwaters System to determine whether the trade-off between benefits has been achieved and allow users to adjust and fine-tune operational changes.

Title: **Software Integration for Watershed Studies (HEC-WAT)**
Presenters: **Chris Dunn, IWR-HEC**

Abstract: The U.S. Army Corps of Engineers conducts watershed and water resources management studies. In many cases, hydrologic, hydraulic, economic, environmental, and social impact analyses are performed independently and the reporting and visualization of modeling results is not coordinated. For a project study, model coordination, data and file sharing, reporting of modeling results, and status reporting are often a problem for the modeling and project management teams.

To address this issue, the Hydrologic Engineering Center (HEC) is developing the Watershed Analysis Tool (HEC-WAT). The WAT is an interface designed to streamline and integrate the planning process using software commonly applied by multi-disciplinary teams. HEC-WAT will help perform comprehensive watershed scale studies by creating procedures and capabilities that allow integrated modeling using risk analysis. The tool would improve coordination and communication across Project Delivery Teams (PDT) thus encouraging a team approach. Management would benefit by being able to track project status through each modeling component and being able to display results during public and project status meetings. HEC-WAT will streamline the analytical process, while producing more consistent results, and shared displays.

Title: **The Application of a Multi-State Tool for the Assessment of Watershed Integrity (MAW) in the Onondaga Lake Watershed**
Presenters: **Michael Greer, Buffalo District; Barbara Kleiss, ERDC; Jeff Lin, ERDC**

Abstract: Increasingly Civil Works water resource projects are developed at the watershed level, thus considering the linkages among landscape components, stream water quality and discharge, and habitat quality. Effective planning and assessment requires tools that address a broad range of issues, integrate a wide variety of spatial data over various scales, provide objective baseline conditions and provide a methodology for predicting the effects of potential restoration projects. An assessment approach that meets these criteria, Multi-scale Assessment of Watershed Integrity (MAWI), has been developed by ERDC and applied in watersheds in California and most recently in central New York. The procedure involves four steps: 1) the delineation of homogenous assessment units and their local drainage areas; 2) the assessment of reach baseline and local drainage conditions using indicators of hydrologic, water quality, and habitat integrity across multiple spatial scales; 3) the assignment of integrity indices based on habitat, hydrology, and water quality models; and 4) the application of baseline assessment results in subsequent alternative analysis. The use of MAWI in feasibility level studies offers considerable advantages over other approaches because existing conditions can be defined in an objective manner and at multiple scales; provides a basis for restoration scenarios and the evaluation of alternative plans; and may be more cost effective than other methods.

SESSION III
TIME: Tuesday 9 May, 3:30-5:00
ROOM: Elizabethan D
TRACK: Planning Community of Practice
TOPIC: Planner Support in the Global War on Terror
MODERATOR: Gene Stakhiv, Institute for Water Resources

PRESENTATIONS:

Title: Water Management Plan for Helmand Valley, Afghanistan
Presenters: Jason Needham, P.E., IWR-HEC

Abstract: The Hydrologic Engineering Center (HEC) is assisting the Afghanistan Engineering District (AED) with developing a water management plan for the Helmand Valley and with restoring water management institutional capabilities within Afghanistan. A water management plan is needed to improve management of the limited water resources available in the Helmand Valley. The plan will define the most efficient balance of water demand between consumption, irrigation, flood control, power production and other downstream water requirements for the Helmand River.

An integral part of project is the participation of Afghan engineers. This involvement will begin with the training of Afghan Ministry staff in modern water management practices. The end result of this work will be a HEC-ResSim model of the Helmand Valley system, a water management plan for the efficient use of the limited resources and the reconstruction of government institutional abilities to manage the system. Using the HEC-ResSim model, several scenarios will be analyzed to account for future growth of the region. A major component of the water management plan will be guide curves for the operation of Kajakai Reservoir on the Helmand River.

Title: Restoring Iraq's National Water Resources Management Capability
Presenters: Matthew M. McPherson, IWR-HEC

Abstract: The Iraq Ministry of Water Resources (MoWR) manages the water control infrastructure of the Tigris and Euphrates Basins to serve national needs. A project is underway to assist the MoWR to regain water management capability and to update data, modeling, and real-time management systems technology now lagging behind current international standards. Also included in the project is assistance with water management studies seeking to provide replenishment of water needed to restore the degraded southern marshes. The work includes re-assembling information on hydrologic data, water management structures, and status of Iraq's water resources management decision-support system; and training MoWR staff in new water management modeling technology. This paper describes the setting and water resources and associated management in Iraq emphasizing the Tigris and Euphrates systems and southern marshes, reports on data and model development activities, and summarizes capacity building assistance.

Title: **The Iraq Mass Graves Product Delivery Team: Collaborative Planning and Project Implementation on an International Scale in Support of the Global War on Terrorism**

Presenters: **Michael K. Trimble, Ph.D., St Louis District and Paul D. Rubenstein, HQUSACE**

Abstract: The U.S. Army Corps of Engineers, St. Louis District, is under contract to the U.S. Department of Justice's Regime Crimes Liaison Office, in the U.S. Mission (Embassy), Baghdad, to perform investigations, studies, evidence collection and recovery of human remains, cultural items and documents from mass graves in Iraq. The purpose of this mission is to provide evidentiary information for the prosecution of high-ranking officials of the former Iraqi Regime by the Iraq Special Tribunal. Under the direction of the Corps Mandatory Center of Expertise for Curation and Management of Archeological Collections, the Iraq Mass Graves Product Delivery Team has completed three field seasons and compiled data for five mass graves within four different provinces of Iraq.

This presentation will review the accomplishments to date of the Iraq Mass Graves Product Delivery Team, including recipients of the Chief of Engineers 2005 Product Delivery Team Award of Excellence. The authors will demonstrate the collaborative relationships developed by the Team with diverse elements of Corps Commands, the current Iraqi government, the Department of Justice, other Federal agencies and non-governmental entities. We will also show how, with modest modifications of team composition and innovative planning, a discrete and highly focused project can be converted to a long-term resource in support of the Global War on Terrorism.

Title: **Planning in the Fast Lane: Iraqi Reconstruction and Development**

Presenters: **Kayla Eckert Uptmor, Los Angeles District**

Abstract: As the nation shifts its resources to the Global War on Terrorism (GWOT) and national natural disasters such as Katrina, the call for support from the U.S. Army Corps of Engineers will maintain pace. Understanding that the USACE mission is primarily reconstruction, it may not seem so obvious where a non-engineer planner may fit in to the effort(s). As a planner, we are trained to juggle a multitude of projects and team members. I found great opportunity in utilizing my planning skill set in coordinating multiple interests and needs of the Iraqi Ministries (essentially the local sponsor), the Maneuver Units (stakeholders) and the Construction Resident and Area Offices (PDT). The magnitude of the work load and the turn around time for execution in this high stress environment was enormous. The plan formulation process was useful in prioritizing work and recommending plans of action as I was responsible for developing, coordinating and managing seven public buildings, 46 health clinics, six hospitals, and 110 schools valued in excess of $470 million. In addition, new skill development was attained through the experience in developing a multitude of scopes of work in conjunction with the design engineers, developing contracting acquisition plans, coordinating funding and personnel resources and maintaining the overall program for reconstruction. All of which contributed to a better understanding of the challenges faced by PDT's after a study moves past Planning. The experience emphasized that applying the flexibility we know well as planners, opens the door to many opportunities for professional and personal growth. Lessons learned also include the need to continue to cross train our personnel between Planning, Engineering and Construction as feasible. Additionally, as a Civil Works Planner, it helped me to understand the USACE military role within the bigger Army picture and how vital our technical expertise is in supporting the military.